OB-8
POLYPHONIC SYNTHESIZER

OWNERS MANUAL

by
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OBERHEIM ELECTRONICS, INC.
2250 So. Barrington Ave.
Los Angeles, CA 90046 USA

CAUTION:
To Prevent fire or shock hazard do not expose this appliance to rain or moisture.

WARNING:
This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device persuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever messures may be required to correct the interference.

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CONGRATULATIONS!!!

And welcome to the OB-8. You have just purchased a state-of-the-art electronic music device. The OB-8 is easy to use, yet contains many features that allow for very precise sound synthesis.

A refinement and evolution of Oberheim's OB-X and OB-Xa, the OB-8 contains more features and better performance, with fewer parts, which means more reliability.

The most important functions on the OB-8 are available simply by pressing the desired button or turning the proper knob; yet there are many other less used functions that can be accessed indirectly, allowing control over many functions without the need for more knobs and buttons.

The OB-8 interfaces with the Oberheim DSX Digital Polyphonic Sequencer, which adds greatly to the OB-8's capability by recording and playing notes as well as patch changes.

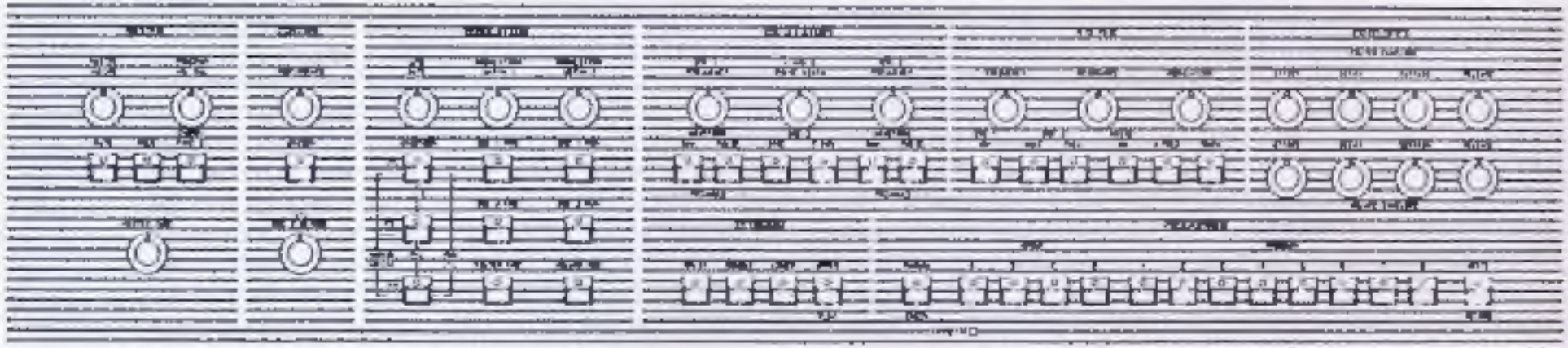
As with any piece of equipment, the more that you know about it, the better you will be able to use it. So read this instruction manual often, to familiarize yourself with the capability of this instrument.

And experiment! You won't discover all of the OB-8's capability unless you do.

Good luck!

OB-8

PAGE 1 FUNCTIONS



1) First, make sure the 115/230 Voltage switch on the rear panel is set for the local AC power;

2) Apply power and plug into your sound system;

3) Press "AUTO" to tune all of the oscillators;

4) Select a programmed sound by pressing a GROUP (A thru D, or any combination) and a PROGRAM (1 thru 8);

5) Set the MASTER VOLUME control to an appropriate level.

6) Play!

MASTER VOLUME

You can adjust the output volume of the DB-8 with the MASTER VOLUME control in the upper left hand corner. This control simultaneously controls both the stereo outputs and the mono output.

MASTER TUNE

The MASTER TUNE control allows the instrument to be fine-tuned to other instruments. When this control is within the "dead-zone" near the top center, the instrument is tuned to standard A-440 pitch.

TUNING

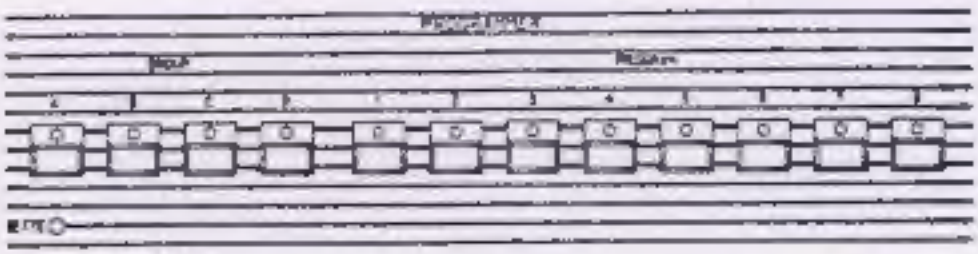
The AUTO button activates the Autotune program. This program tunes the initial frequency and volts/octave (tracking) of the oscillators one at a time, and the PROGRAM lights will flash one after the other, to indicate which voice is currently being tuned.

While the Autotune program is running, the outputs and all controls are disabled. The Autotune program also calibrates the pitch bend lever for zero bend and the vibrato lever for zero vibrato. It is important that the levers be left alone during Autotune, so that the Autotune program can set the zero points accurately.

If a particular voice cannot be tuned by the Auto-tune program, the PROGRAM light representing that voice will flash for two seconds, and the computer will automatically disable the out-of-tune voice.

PAN POTS

The DB-8 comes from the factory with Voices 1-4 panned all the way to the left and Voices 5-8 panned all the way to the right. Each of the voices can be panned anywhere in the stereo outputs by setting the pan pots located on the right side of the unit.



There are two types of programs stored in the OB-8's memory:

> PATCH PROGRAMS that store sounds.
> SPLIT/DOUBLE PROGRAMS that store combinations of Patch Programs.

The OB-8 comes from the factory pre-programmed with 104 Patch Programs, 12 Split Programs, and 12 Double Programs. These include a great variety of sounds which will quickly acquaint you with the capabilities of your instrument. The OB-8 Programmed Patches book details these factory programs.

RECALLING PATCH PROGRAMS

The Patch Programs on the OB-8 are divided into 15 GROUPS of 8 PROGRAMS each. The 15 GROUPS are selected by pressing the four GROUP buttons ("A", "B", "C", & "D") individually OR in any combination ("AB", "AC", "BC", "ABC", "ABCD", etc.). The PROGRAM within the selected GROUP is then selected by pressing one of the eight PROGRAM buttons.

MODIFYING PATCH PROGRAMS

Any sound recalled by the programmer can be modified (edited) by changing the controls on the front panel.

The controls add to, or subtract from, the settings stored in the computer program. For example, the release time of the LOUDNESS ENVELOPE can be made longer than programmed simply by turning up the RELEASE control on the LOUDNESS ENVELOPE. This feature allows quick yet smooth modifications of existing programs. If it is desired to further increase or decrease a control setting, and the control is already at its maximum or minimum position, simply rotate the control all the way in the opposite direction and then make your desired setting.

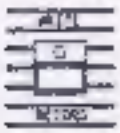
Modifying the program does not change the program stored in the OB-8's memory, and the original, unmodified sound program can be recalled by pressing the appropriate PROGRAM button again.

For more information, see the sections titled "SOUND PROGRAMMING CONTROLS" and "PAGE 2 CONTROLS".

The OB-8 can be used to create completely new sounds, rather than alter existing sounds as described above, by using the MANUAL MODE. In MANUAL, the sound of the instrument will reflect the actual physical settings of the controls.

NOTE: The MANUAL MODE cannot be used while in SPLIT or DOUBLE modes, and the 2ND PAGE of controls have no effect (except for VOICE ENABLES -- see "PAGE 2")

WRITING PROGRAMS



New, modified, or even existing programs can be written into the OB-8's memory. This is done with the following procedure:

1) Press and hold WRITE until the WRITE light comes on;

2) Select a GROUP (A thru D, or any combination)

3) Select a PROGRAM (1 thru 8).

The write operation actually occurs when the PROGRAM switch is pressed, with the WRITE light on.

NOTE: Before any programs can be written, the MEMORY PROTECT SWITCH on the rear panel must be OFF.

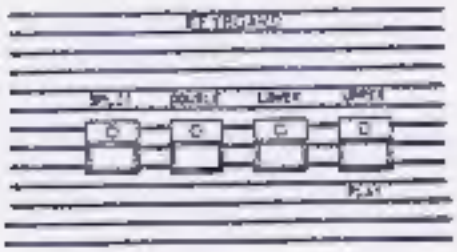
MOVING PROGRAMS

It is possible to move a program from one program memory location to another. To do this, simply select the program you wish to move, and then write into the desired new program location, as described above.

The OB-8's normal configuration is that of a single 8 voice synthesizer. In Split or Double modes however, the OB-8 is divided into two separately programmable 4 voice synthesizers, called Lower and Upper. Any of the 120 Patch Programs can be recalled for the Lower or Upper synthesizers, or a combination "Split Program" or "Double Program" can be recalled.

SPLIT AND DOUBLE FUNCTIONS

The KEYBOARD SECTION controls operate individually and in combination with each other to produce eleven different functions with just Four buttons:



FUNCTION:	PRESS:	DESCRIPTION:
Enter Split Mode	SPLIT	When this button is pressed, the OB-8 enters the SPLIT mode. Pressing it again without any keys held down causes the OB-8 to exit the SPLIT mode.
Enter Double Mode	DOUBLE	When this switch is pressed the OB-8 enters the DOUBLE mode. Pressing the switch again causes the OB-8 to exit the DOUBLE mode.
Change Split Point	SPLIT (hold down) KEY (on the keyboard)	The key depressed is now the lowest note of the UPPER keyboard. This new SPLIT LOCATION will be remembered until a new split is entered, or a split is recalled from memory.
Display Lower Program	LOWER	The Lower Program can be edited or changed without affecting the Upper Program.
Display Upper Program	UPPER	The Upper Program can be edited or changed without affecting the Lower Program.
		NOTE: The MANUAL mode cannot be used when in SPLIT or DOUBLE.

FUNCTION.	PRESS:	DESCRIPTION
Change Lower Transposition	SPLIT or DOUBLE (hold) LOWER (hold) KEY on the keyboard.	The Lower Voices are referenced to the lowest "C" on the keyboard (C0). Transpositions may be made to any key. Pressing the "G" above the lowest "C" will transpose the Lower Voices up a fifth. Transpositions may be made in SPLIT or DOUBLE.
Change Upper Transposition	SPLIT or DOUBLE (hold UPPER (hold. KEY (on the keyboard)	The Upper Voices are referenced to middle "C" on the keyboard (C2). Transpositions may be made to any key. Pressing the "C" below middle "C" will transpose the Upper voices down an octave
Recalling Split Programs	SPLIT (hold GROUP A-D; or PROGRAM (1-8)	There are twelve SPLIT PROGRAMS which can be programmed and recalled. (see "SPLIT AND DOUBLE PROGRAMS", below).
Recalling Double Programs	DOUBLE (hold) GROUP A-D; or PROGRAM (1-8)	There are twelve DOUBLE PROGRAMS which can be programmed and recalled. (see "SPLIT AND DOUBLE PROGRAMS", below).
Resetting Split Point & Transpositions	SPLIT or DOUBLE (hold) MANUAL	The SPLIT location and Transpositions are reset to "normal" (Split Location at middle C, no transpositions). Balance and Lower Voices Detune are also reset.
Change Lower Voices Tuning	LOWER (hold, (turn) OSC 2 DETUNE	The Lower voices can be detuned sharp or flat from the Upper voices. The LED above the OSC 2 DETUNE control will turn on when the Lower voices are detuned (only while holding the LOWER button).

The balance between the Upper and Lower voices can be adjusted by turning the VOL/BAL control in the MASTER SECTION of the front panel.

All settings, including Patch Programs, Split Point, Transpositions, Balance, and Lower Voices Detune are remembered until the settings are changed, either by hand or by a Split or Double Program. When you exit the Split or Double modes, the DB-8 retains all of these settings; so that when you re-enter Split or Double, all of the settings will be recalled as they were when you were last in SPLIT or DOUBLE, even if the synthesizer was turned off.

In Split and Double there are two patches recalled. One for Lower and one for Upper. Either patch can be modified or changed by displaying the desired patch (with the LOWER or UPPER button) and then changing the controls on the front panel.

SETTING THE SPLIT POINT

Press and hold the SPLIT button, and while holding the SPLIT button, press any key on the keyboard. This key becomes the bottom note of the Upper synthesizer. The keyboard can be split anywhere, and is remembered until changed.

SETTING LOWER AND UPPER TRANSPOSITIONS

Either half of the synthesizer can be transposed by any amount.

The Lower half can only transpose up. To transpose the Lower half, press and hold the current mode (either SPLIT or DOUBLE, and LOWER. While holding both LOWER and SPLIT or DOUBLE press a key on the keyboard. The interval between this key and the lowest note on the keyboard (C0) becomes the transposition for the Lower synthesizer.

The Upper half can transpose up or down. To transpose the Upper half, press and hold the current mode (either SPLIT or DOUBLE) and UPPER. While holding both UPPER and SPLIT or DOUBLE press a key on the keyboard. The interval between this key and Middle C (C3) becomes the transposition for the upper synthesizer.

SETTING THE BALANCE BETWEEN LOWER AND UPPER

The control labelled PROGRAM VOL/BAL adjusts the balance between the Upper and Lower voices.

The Programmed Volume of each patch program is ignored when in SPLIT or DOUBLE.

DETUNING THE LOWER VOICES

The Lower voices can be detuned up or down from the Upper voices by pressing the LOWER button, and while holding it, turning the control labelled OSC 2 DETUNE. The LED above the control will turn on when the Lower Voices are detuned from the Upper voices.

SPLIT AND DOUBLE RESET

All of the functions unique to Split and Double (Transpositions, Split Point, Lower Voices Detune, Balance) can be reset by pressing and hold the current mode (SPLIT or DOUBLE) and while holding SPLIT or DOUBLE, pressing MANUAL. These functions will be reset to the following values:

FUNCTION:	RESET TO:
Split Location	Middle C (C3)
Lower Transposition	Low C (C0)--no transposition
Upper Transposition	Middle C (C3,--no transposition
Balance	12 O Clock--equal balance

The OB-8 is capable of storing 12 Split Programs, each of which will remember the following

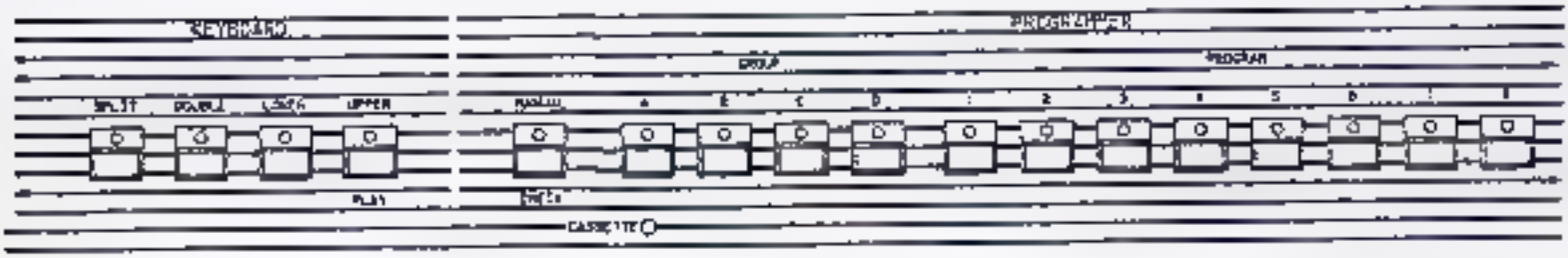
Lower Patch Program Number
Upper Patch Program Number
Split Location
Lower Transposition
Upper Transposition
Balance
Lower Voices Detune

These settings are stored using the SPLIT button and any one of the 4 GROUP buttons or 8 PROGRAM buttons.

The OB-8 is also capable of storing 12 Double Programs These settings are stored using the DOUBLE button and any one of the 4 GROUP buttons or 8 PROGRAM buttons.

The storage of Split and Double Programs are independent of the Patch Programs.

Split and Double Programs remember Patch Program Numbers (e.g ,"A8") and not the Patch itself If a Split Programs utilizes Patch Program "A1" and "A1" is changed, the Split sound will change as well.



RECALLING SPLIT AND DOUBLE PROGRAMS

To recall a Split Program hold SPLIT, and while holding SPLIT, press a GROUP or PROGRAM button. Make sure to release the SPLIT button last. The Lower Patch Program recalled as part of the Split Program is displayed on the GROUP and PROGRAM buttons.

To recall a Double Program, the procedure is the same: hold DOUBLE, and while holding DOUBLE, press a GROUP or PROGRAM button.

In Split and Double there are two patches recalled, one for Lower, and one for Upper. To display the Lower patch, press LOWER, to display the Upper patch, press UPPER. Either patch can be modifyed by displaying the desired patch and then changing the controls on the front panel.

NOTE:The MANUAL mode cannot be used while in SPLIT or DOUBLE

In addition, all of the Split and Double parameters (Split Point, Balance, etc) that are recalled as part of a Split or Double Program can be modified as described above.

WRITING SPLIT AND DOUBLE PROGRAMS

To write a Split Program:

1) Press and hold the WRITE button until the WRITE light comes on;

2) Hold SPLIT and press a GROUP or PROGRAM button.

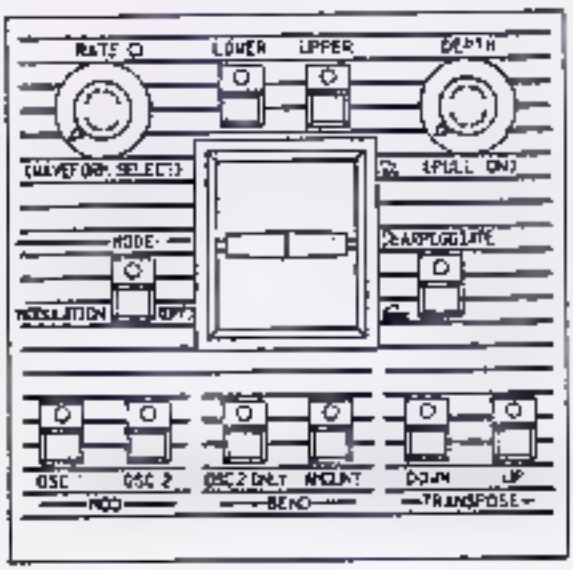
Whatever Patches, Transpositions, Split Point, Balance, and Lower Voices Detune being used at that time are now stored into the selected Split Program. The selected Split Program will not light, instead the Lower Patch Program will be displayed.

To write a Double Program follow the same proceedure except Press and hold DOUBLE instead of SPLIT.

NOTE: Edited Patch Programs will not be remembered, only the Patch Program as previously stored.

These controls are used while playing the D8-8. The settings of these controls are not stored with a program, but remain in the D8-8's memory until changed.

MODULATION PANEL



TRANSPOSE DOWN & UP — These switches allow you to transpose the entire keyboard up or down one octave from the normal range. When neither of the two buttons are on, the keyboard is in the normal range Pressing the DOWN button transposes the keyboard one octave below normal. Pressing the UP button transposes the keyboard one octave above normal.

MODE — The MODULATION/PITCH BEND and the ARPEGGIATOR share the same controls on the Modulation Panel. With the MODE switch off, the MODULATION and PITCH BEND controls of the Modulation Panel are displayed. With the MODE switch on, the ARPEGGIATOR controls are displayed.

The MODULATION/PITCH BEND and the ARPEGGIATOR both operate at all times. The MODE button simply changes the functions of the buttons.

MODULATION LEVER — This lever controls the amount of modulation from the LFO to the assigned Oscillators. Pulling this control towards the front of the unit will add modulation. If the DEPTH control is on, this lever will add more modulation to the amount set by the DEPTH control. It has no effect when pushed toward the rear.

RATE — This controls the rate of the LFO. The rate can be adjusted from about .06 Hz to 50 Hz

Waveform Selection — The various waveforms of the LFO are shown in the following table:

DESIRED WAVEFORM	RATE KNOB SHOULD BE.	WHILE BEND LEVER IS:
TRIANGLE	Pushed Down	Straight
SQUARE	Pulled Up	Straight
UP SAWTOOTH	Pulled Up	UP (towards the front of the unit)
DOWN SAWTOOTH	Pulled Up	DOWN (towards the rear of the unit)
NOISE	Pushed Down	UP (towards the front of the unit)
SAMPLE/HOLD	Pushed Down	DOWN (towards the rear of the unit,

DEPTH — This control allows you to control the depth of the LFO without using the MODULATION LEVER. Turning the knob determines the modulation depth, and pulling up on the knob puts this control into effect.

The amount of depth set by this control is added to the depth controlled by the MODULATION LEVER or the external MODULATION PEDAL.

OSC 1 & OSC 2 — These switches determine the destination of the LFO.

PITCH BEND LEVER

This lever is used to bend the pitches of notes being played. Pulling it towards the front of the unit causes the pitch to go up, and pushing it towards the rear causes the pitch to go down. Its range is determined by the AMOUNT switch.

AMOUNT

This switch determines the range of the PITCH BEND LEVER. When this switch is off, the PITCH BEND LEVER has a range of up or down one whole step (e.g. "C" could move up to a "D" or down to a "Bb").

Programming Bend Amount

When the AMOUNT switch is on, the PITCH BEND LEVER can be programmed to bend an amount between a quarter-tone and an octave up or down. To program the amount of pitch bend, press and hold the AMOUNT button, and while holding it, press any key in the lowest octave of the keyboard. The interval between the lowest C and the key pressed becomes the maximum range of the bend lever. For example, holding the AMOUNT button and pressing the lowest Eb on the keyboard (Eb0 will program a maximum bend range of a minor third up or down. The amount of pitch bend with the AMOUNT light on will remain at this same programmed value until changed, even if the power is turned off.

OSC 2 ONLY

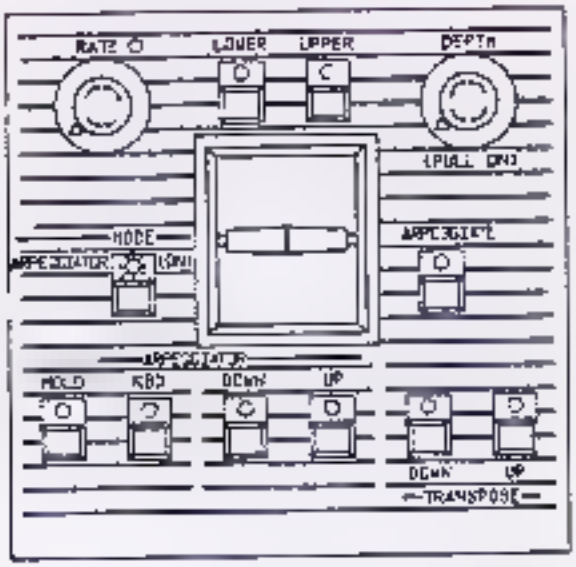
When this switch is on, the PITCH BEND lever bends only Oscillator 2 of each voice. When this switch is off, the BEND LEVER bends both Oscillators.

Bending only Oscillator 2 has an interesting, timbral effect on programs in which Oscillator 2 is in SYNC.

LOWER & UPPER

These buttons are used to assign all of the functions of the MODULATION and PITCH BEND controls, to either half of the keyboard when in the SPLIT or DOUBLE mode. The LOWER and UPPER switches have separate functions for the ARPEGGIATOR, so that the arpeggiator and modulation can be assigned to Upper or Lower independently.

The LOWER and UPPER switches will both come on when not in the SPLIT or DOUBLE modes, and will revert to their previous settings upon re-entering Split or Double.



MODE — The ARPEGGIATOR shares the same controls on the Modulation Panel with the MODULATION and PITCH BEND. With the MODE switch on, the ARPEGGIATOR controls are displayed.

ARPEGGIATE — This button turns the arpeggiator on and off. The ARPEGGIATE button operates while either arpeggiator or modulation is displayed (whether the MODE switch is on or off).

KBD — When this button is on, notes played on the keyboard will arpeggiate.

HOLD — When this button is on, held notes or a held chord will arpeggiate. The operations for holding and transposing an arpeggio is the same as for holding and transposing a chord (see,"HOLD AND CHORD FUNCTIONS, BELOW).

Either the KBD or the HOLD button (or both) can be selected at one time.

UP & DOWN — These buttons work together to create four arpeggiator modes:

If the UP button is on, the notes will arpeggiate in the order played.

If the DOWN button is on, the notes will arpeggiate in the reverse order in which they were played.

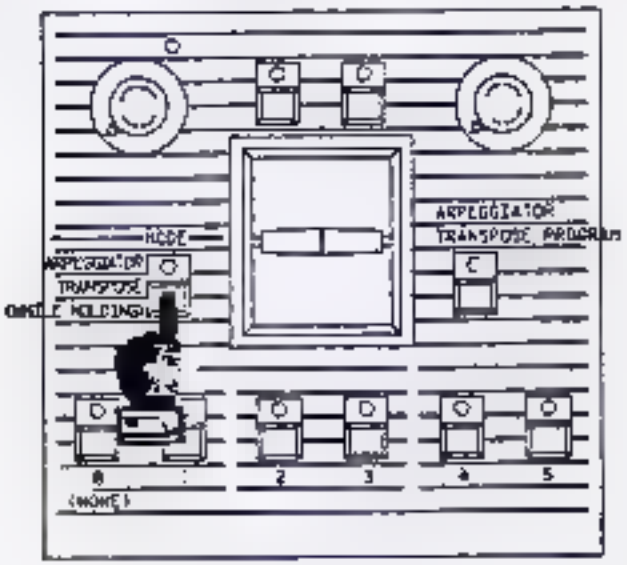
If BOTH the UP and DOWN buttons are on, the notes will arpeggiate first in order, and then in reverse order.

If NEITHER the UP nor the DOWN buttons are on, the notes will arpeggiate in random order. The random sequence is weighted so that the first note played will sound more often than the others, and that a note will not sound twice in a row.

LOWER & UPPER — These buttons are used to assign the ARPEGGIATOR to either or both halves of the keyboard when in SPLIT or DOUBLE. In SPLIT, the arpeggiator will first arpeggiate the LOWER half of the keyboard and then the UPPER half regardless of the order in which the notes were played (except in reverse "DOWN" mode in which case the UPPER half will play first).

Either the LOWER or the UPPER button (or both) can be selected when in Split or Double. They will both come on when not in the SPLIT or DOUBLE modes, and revert to their previous settings upon re-entering SPLIT or DOUBLE.

The OB-8's arpeggiator can transpose arpeggiating notes by up to five programmable intervals. The six buttons at the front of the MODULATION PANEL become the six transpose buttons (five plus no transposition) only while the MODE button is pressed.



The left button (labelled HOLD and OSC 1) selects no transposition. With no transposition, the notes will arpeggiate as played (or held).

The other five buttons select the five transpositions. Each transposition adds to the previous transpositions, i.e. pressing the right-most button (labelled TRANSPOSE UP) will arpeggiate the notes played (or held), and then transpose the arpeggiation by the first interval, then by the second, third, fourth, and finally the fifth, before starting over at the bottom.

When shipped from the factory, the transpositions are programmed to be successive octaves, but any of the transposition can be programmed to be any interval. See "PROGRAMMING ARPEGGIATOR TRANSPOSITIONS", below.

In the ARPEGGIATE UP mode, the notes played (or held) will first arpeggiate as played, then by each transposition as selected.

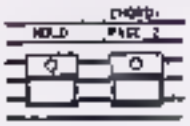
In ARPEGGIATOR DOWN mode, the arpeggiator action is the reverse. the notes played (or held, will first arpeggiate in reverse played order, transposed by the last interval selected, then by the previous interval, etc., until reaching the actual notes played.

In RANDOM mode (neither UP nor DOWN pressed), both the notes played as well as the transpositions will be random.

PROGRAMMING ARPEGGIATOR TRANSPOSITIONS

Press and Hold BOTH the ARPEGGIATOR MODE button, and the ARPEGGIATE button. While holding BOTH buttons, play five keys on the keyboard, one at a time. These five keys become transpositions 1, 2, 3, 4, and 5 in the order in which they are played. The arpeggiator will now transpose played or held notes by these intervals, after arpeggiating the notes as played.

HINT: To avoid turning the Arpeggiator on or off while programming transpositions, press the MODE button before pressing the ARPEGGIATE button.



HOLD

This button is used to produce a sustained note or chord To use, press the HOLD button and simultaneously play one or more notes, and then release the HOLD button. The note or notes played will now be sustained indefinitely. You can play notes one at a time or all at once, while holding down the HOLD button. To cancel the hold function, press HOLD a second time, but be sure not to hold down any keys.

The HOLD button and the HOLD FOOTSWITCH operate the same and can be used interchangeably.

HOLD may be used in Split and Double to sustain different sounds at once, and with the Arpeggiator to arpeggiate a sequence of notes without having to hold them down. (see "ARPEGGIATOR")

CHORD
Chord Hold

The HOLD and CHORD buttons can be used together to play chords with one key. First, select the desired notes by using the HOLD function as described above. Then, press the CHORD switch. The held chord will cease sounding. By playing low C (C0) on the keyboard, the held chord will be reproduced as previously played. Playing notes above C0 will transpose the chord up by a corresponding interval. If the G above lowest C (G0) is played, the chord will sound transposed up a fifth; if the C two octaves above the lowest C (C2) is played, the chord will sound transposed up by two octaves. The actual note being played will not sound.

Transpose Limit

The transposing effect can be limited to a part of the keyboard. Press the CHORD button, and while holding it press a key on the keyboard. This key becomes the Transpose Limit. A held chord will not be transposed above this key Above the Transpose Limit, the remaining voices will play normally. The Transpose Limit remains stored in memory until changed.

NOTE The Transpose Limit can only be changed while a chord is being held.

The chord will always be transposed by the lowest note on the keyboard below the Transpose Limit, even in split. However, individual notes can be played above the note transposing the chord as well as above the Transpose Limit. To exit the CHORD mode, simply press the HOLD switch.

Chord Latch

A held chord can be latched so it will remain gated on. Press and hold the CHORD button, and then press the HOLD button (be sure to release the HOLD button before releasing the CHORD button. A held chord will now stay on (be latched on). To turn off the chord latch, repeat the above proceedure.

The arpeggiator will continually cycle through a latched chord, and will not restart when the transposition is changed.

The chord latch is off when the OB-8 is first turned on.

The Foot Switch inputs are designed for use with the Model S-OBX Foot Switch. The S-OBX contains a momentary, normally open switch.

SUSTAIN

Pressing the Sustain Switch causes the RELEASE on all Envelope Generators to be set to the amount programmed in each Patch (on PAGE 2). The PEDAL SUSTAIN time has the same range as the front panel RELEASE TIME of the envelope generators. In SPLIT or DOUBLE, the two patches will each die out according to their own programmed PEDAL SUSTAIN time.

PROGRAM ADVANCE

Pressing the Program Advance Switch advances the programmer to the next program. For example, if program A6 is presently selected and this switch is pressed, the Programmer moves on to program A7.

As the footswitch is depressed, the programs cycle as follows:

GROUP NO.	LIGHTS A	B	C	D
1	*			
2		*		
3	*	*		
4			*	
5	*		*	
6		*	*	
7	*	*	*	
8				*
9	*			*
10		*		*
11	*	*		*
12			*	*
13	*		*	*
14		*	*	*
15	*	*	*	*

HOLD

The Hold switch functions exactly like the HOLD button on the front panel, and will cause the HOLD light to light when in use.

The Pedal inputs are designed for use with the Model P-OBX Foot Pedal. They are also designed to respond to Control Voltages, from the DSX Sequencer or other sources.

VOLUME — The Volume Pedal varies the volume of the OB-8 from zero to the MASTER VOLUME setting on the front panel

The VOLUME jack also can be used as a Control Voltage output that will vary depending upon the setting of the MASTER VOLUME control on the front panel.

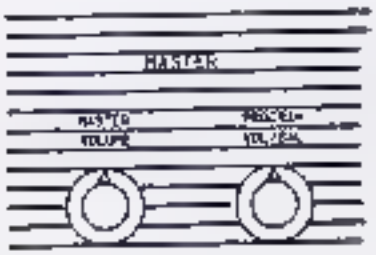
VIBRATO — The Vibrato Pedal functions like the Vibrato Lever on the MODULATION PANEL. It allows the user to add vibrato from the LFO in the MODULATION PANEL to whatever oscillators are assigned to it.

FILTER — This pedal controls the FILTER FREQUENCY of all voices. The range of the pedal is from a slightly lower frequency than when the pedal is not connected, to a significantly higher frequency.

The controls described on the next few pages are used control the sound of the OB-8. It is the settings of these controls that is actually stored in the OB-8's program memory.

Any sound recalled by the programmer can be modified (edited) by changing these Sound Programming Controls. The controls add to, or subtract from, the settings stored in the computer program. For example, the release time of the LOUDNESS ENVELOPE can be made longer than programmed simply by turning up the RELEASE control on the LOUDNESS ENVELOPE This feature allows quick yet smooth modifications of existing programs

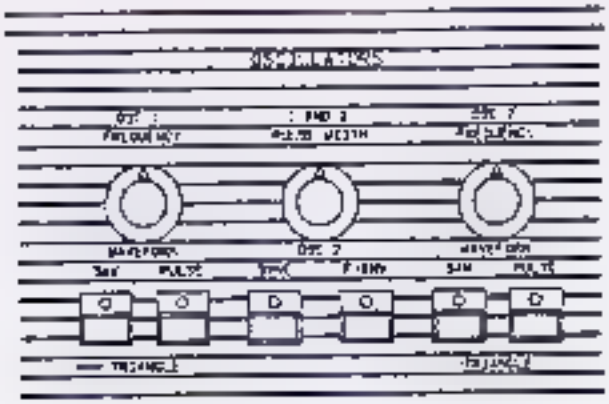
When selecting a program, the front panel settings do not affect the sound of the instrument. For instance, if a sound had originally been programmed with a FILTER FREQUENCY setting at 12 o clock, but later the program is recalled with the FILTER FREQUENCY control set at 9 o'clock, the program sound will be the same as if the FILTER FREQUENCY control was set at 12 o clock. If it is desired to further increase or decrease a control setting, and the control is already at its maximum or minimum position, simply rotate the control all the way in the opposite direction and then make your desired setting.



PROGRAM VOL/BAL

This control sets the volume of each patch program.

NOTE:In SPLIT or DOUBLE, the PROGRAM VOLUME of each patch is disregarded in favor of the PROGRAM BALANCE of the Split or Double Program.



OSCILLATORS

1 FREQUENCY This control determines the initial frequency of Oscillator 1. It operates in half steps within a four octave range.

WAVEFORM (SAW/PULSE) These switches choose the waveform of Oscillator 1.

If the SAW switch is on, a sawtooth wave is selected. A Sawtooth wave contains all of the harmonic overtones.

If the PULSE switch is on, a pulse wave is selected. Compared to a sawtooth wave, a pulse wave is missing some of the harmonics (the harmonic spectrum of the pulse wave is controlled by the PULSE WIDTH control), and the sound is thinner as a result.

If BOTH the SAW and the PULSE switches are on, then both sawtooth and pulse waves are selected This combination creates and extremely fat sound The PULSE WIDTH control and the PULSE WIDTH MODULATION from the LFO will still affect the pulse wave in this mode.

If NEITHER switch is on, a triangle wave is selected. The triangle wave has the harmonics of the sawtooth wave, only they are much softer in volume relative to the fundamental, and the resulting sound is closer to the pure tone of a sine wave.

PULSE WIDTH — This control sets the initial pulse width of both oscillators. When it is set fully counter-clockwise a square wave (50 % duty cycle) is selected. Turning this control clockwise makes the sound progressively thinner and more nasal.

Individual Pulse Widths — The PULSE WIDTH control is also used to set the pulse width of each oscillator independently. Press the PULSE button of the desired OSC (1 or 2), and while holding the PULSE button, turn the PULSE WIDTH control. Turning the PULSE WIDTH control all the way clockwise or counter-clockwise will reset the individual pulse width setting of the oscillators.

SYNC — Pressing this switch causes Oscillator 2 to lock onto a harmonic of Oscillator 1. Since Oscillator 2 is syncing to Oscillator 1, changing the frequency of Oscillator 2 will cause a timbral change rather than a pitch change.

F-ENV — This switch allows the FILTER ENVELOPE to modulate the frequency of OSC 2. The amount is controlled by the MODULATION control in the FILTER section. With this control at its maximum setting, and the FILTER ENVELOPE SUSTAIN level at maximum, OSC 2 will increase in pitch one octave.

2 FREQUENCY — This control determines the initial frequency of Oscillator 2. It operates in half steps within a four octave range.

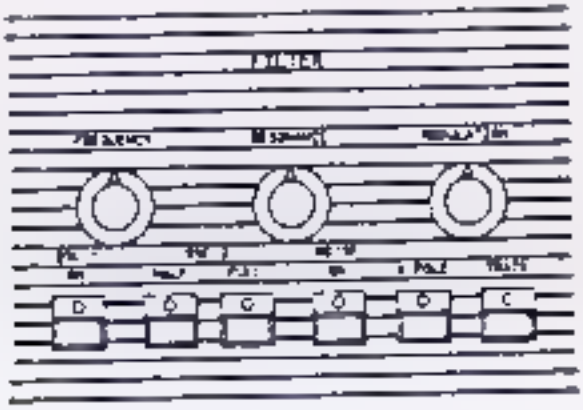
WAVEFORM (SAW/PULSE) — These switches choose the waveform of Oscillator 2.

If the SAW switch is on, a sawtooth wave is selected. A Sawtooth wave contains all of the harmonic overtones.

If the PULSE switch is on, a pulse wave is selected. Compared to a sawtooth wave, a pulse wave is missing some of the harmonics (the harmonic spectrum of the pulse wave is controlled by the PULSE WIDTH control), and the sound is not as "fat" as a result.

If BOTH the SAW and the PULSE switches are on, then both sawtooth and pulse waves are selected. This combination creates and extremely fat sound. The PULSE WIDTH control and the PULSE WIDTH MODULATION from the LFO will still affect the pulse wave in this mode.

If NEITHER switch is on, a triangle wave is selected. The triangle wave has the harmonics of the sawtooth wave, only they are much softer in volume relative to the fundamental, and the resulting sound is closer to the pure tone of a sine wave.



FILTER

The Voltage Controlled Low Pass Filter (VCF) are used to control the brightness of the sound, filtering out the higher frequencies (the "buzz") in a very controllable manner. The Filter is arguably the most important component in a synthesizer, because it is the primary control of the timbre, or tone color of the sound. Because of this, the filter on each voice of the OB-8 can be set to two modes 2-Pole and a 4-Pole In the OB-8, the Filter Section also selects the sound sources (Oscillators and Noise) that are used in the patch.

FREQUENCY — This control sets the initial cut-off frequency of the Filter.

RESONANCE — This control determines the amount of resonance ("Q" or "emphasis") of the Filter. The RESONANCE emphasizes the cut-off frequency of the Filter. As the RESONANCE is increased, the overall volume of the sound will increase in the 2-POLE mode and decrease in the 4-POLE mode.

MODULATION — This control determines the amount of Filter Envelope which modulates the Filter. Modulation of the Filter by the Envelope is a critical element in the synthesis of brass sounds as well as creating percussion in organ sounds, to name just a few uses. The MODULATION control also determines how much Filter Envelope will modulate OSC 2 when the F-ENV switch is on The LFO can also modulate the Filter. See "MODULATION SECTION"

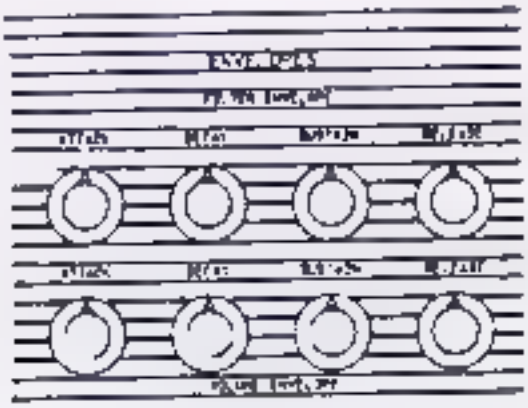
OSC 1
▪ When this switch is on, Oscillator 1 is routed into the Filter.

OSC 2
HALF/FULL When either of these switches are on, Oscillator 2 is routed into the filter. The FULL switch selects the full output of the oscillator and the HALF switch selects a signal level approximately 5 db below full output.

NOISE
ON When this switch is on the Noise Generator is routed into the Filter.

4-POLE Turning this switch on selects the 4-POLE filter mode. When this switch is off the 2-POLE filter mode is selected. The effect of this switch is to change the sharpness of the filtering effect. The 4-POLE mode has a 24db/octave slope (sharper), which results in a fuller sound. The 2-POLE mode has a 12db/octave slope (more gradual), which results in a brighter sound.

TRACK This switch adds the control voltage from the keyboard to control the Filter Frequency. When on, the Filter in each voice will track the keyboard, and "open up" as higher notes are played. The TRANSPOSE and MASTER TUNE controls will also control the Filter when TRACK is switched on.



ENVELOPES

The Envelope Generators control the timing of the sound. It is the Envelopes that make a long sound long, and a short sound short. For example, the difference between a crashing ocean wave, and an explosion. There are two envelopes on each voice of the DB-5; one that controls the Filter (VCF) for timbral control, and one that controls the Amplifier (VCA) for volume control.

---FILTER ENVELOPE---

ATTACK — The Attack section of the envelope operates as soon as a key is pressed on the keyboard. This control sets the time the Filter takes to get to its maximum effect, as determined by the MODULATION control in the FILTER SECTION. The shortest time is selected by setting the ATTACK control fully counter-clockwise.

DECAY — The Decay section of the envelope comes into operation as soon as the envelope has reached its maximum level (as soon as the Attack is completed). This control sets the time the Filter takes to reach the sustain level, as set by the SUSTAIN control, while a key on the keyboard is being held down.

SUSTAIN — This control sets the level the Filter Envelope goes to following its initial decay, as set by the DECAY control. The Envelope will stay at the Sustain Level as long as the key on the keyboard is held down.

RELEASE — Once the key is released, the Envelope moves to the Release section, and completes its cycle. The RELEASE control sets the time the Filter takes to go from the Sustain level, to the off level. If the SUSTAIN control is set to minimum, the Release section will have no effect on the sound if the key is pressed and held down. If the key is pressed and immediately let go (in less time then the combined Attack and Decay time), then the Release Section will still have an effect.

Envelope Reset — The Release of Envelope can be cut short by pressing the WRITE button.

Modulating OSC 2 With The Filter Envelope — When the F-ENV switch is on, the Filter Envelope modulates OSC 2 as well as the FILTER. The pitch of OSC 2 will directly correspond to the shape of this Envelope. The ATTACK determines how fast OSC 2's pitch will rise, the DECAY determines how fast OSC 2 will decrease in pitch to the level set by the SUSTAIN control, and the RELEASE determines how fast OSC 2 will decrease in pitch after a note has been released. The MODULATION control in the Filter Section will control the range of the effect of the Filter Envelope on both the Filter as well as Oscillator 2.

---VOLUME ENVELOPE---

ATTACK — The Attack section of the envelope operates as soon as a key is pressed on the keyboard. This control sets the time the sound takes to get to its maximum volume. The shortest time is selected by setting the ATTACK control fully counter-clockwise.

DECAY — The Decay section of the envelope comes into operation as soon as the envelope has reached its maximum level (as soon as the Attack is completed). This control sets the time that the VCA (that controls volume) takes to reach the sustain level, as set by the SUSTAIN control, while a key on the keyboard is being held down.

SUSTAIN — This control sets the level the Volume Envelope goes to following its initial decay, as set by the DECAY control. The Envelope will stay at the Sustain Level as long as the key on the keyboard is held down.

RELEASE — Once the key is released, the Envelope moves to the Release section, and completes its cycle. The RELEASE control sets the time the sound takes to go from the Sustain level, to the minimum level. If the SUSTAIN control is set to minimum, the Release section will have no effect on the sound if the key is pressed and held down. If the key is pressed and immediately let go (in less time than the combined Attack and Decay time), then the Release Section will still have an effect.

Envelope Reset — The Release of Envelope can be cut short by pressing the WRITE button.

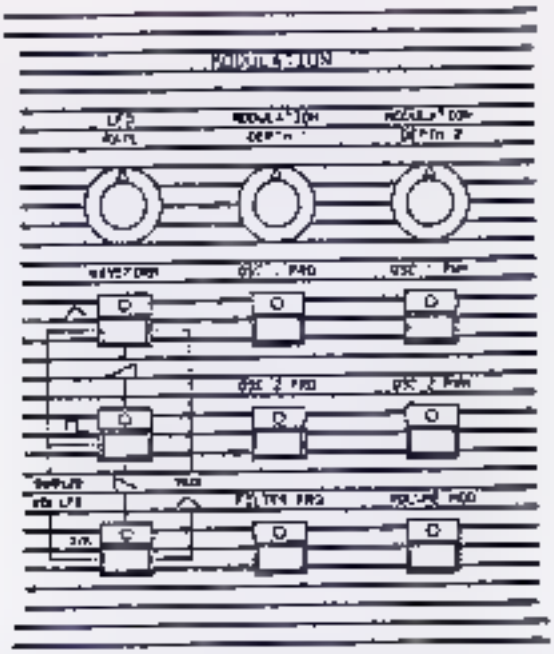
CONTROLS

PORTAMENTO — This control determines the rate of portamento or "glide" of each voice as that voice's pitch is changed. Note that the portamento of the OB-8 is polyphonic, so each voice will glide from note to note independently of all other notes. Portamento also functions in UNISON mode. There are several Portamento Modes. For more information, see "PORTAMENTO MODES".

UNISON — When switched on, causes all voices to be sounded by one key depression. In UNISON, the OB-8 keyboard operates with low note rule, which means that the lowest note played on the keyboard will always have priority. When in SPLIT, the UNISON mode is independent for the two halves of the keyboard, so if the upper half is in UNISON, then only the lowest note of the upper half of the keyboard will affect it.

OSC 2 DETUNE — This control allows Oscillator 2 to be tuned either flat or sharp relative to Oscillator 1. Turning the control to the left makes Oscillator 2 go flat and to the right makes it go sharp. The LED above the OSC 2 DETUNE control turns on when the Oscillator 2 is detuned from Oscillator 1.

MODULATION



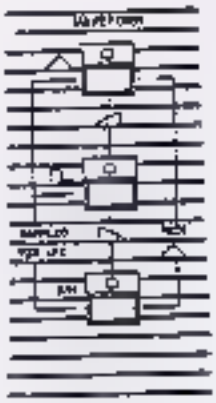
THE LOW FREQUENCY OSCILLATORS (LFOS) are used for modulation at low frequencies --that is, frequencies near or below the range of hearing. If you were to listen to an LFO directly, you would not hear anything; however by controlling the frequency or pulse width of an oscillator or filter, the effect of an LFO becomes apparent.

The OB-8 contains three LFOs: two are controlled from the Modulation Section on the front panel and are discussed here, the third is controlled from the Modulation Panel to the left of the keyboard (see "PERFORMACE CONTROLS").

-- MODULATION SOURCE --

RATE This control determines the SPEED of modulation. The range is from approximately 1/15 oscillation per second to 50 oscillations per second.

WAVEFORM The WAVEFORM switches select the modulation source according to the following table:



Sine	1
Square	2
Sample/Hold	3
Up Sawtooth	1,2
Down Sawtooth	2,3
Trig Waveform	1,3

In this mode, the LFO resets each time a key is pressed (There are several options for this mode that are available on PAGE 2—see "PAGE 2 CONTROLS").

Sampled Vibrato LFO	1,2,3

This mode is something like SAMPLE/HOLD, except that while SAMPLE/HOLD samples noise, this mode samples the LFO in the Modulation Panel, which can be set to several different waveforms and speeds itself (see "PERFORMANCE CONTROLS").

-- MODULATION DESTINATIONS --

MODULATION 1

DEPTH 1 — This control determines the AMOUNT of modulation sent to the destination switches below.

OSC 1 FRQ — Pressing this switch routes frequency modulation to Oscillator 1. Small amounts of frequency modulation are frequently used to create vibrato effects; larger amounts can be used for special effects.

OSC 2 FRQ — Pressing this switch routes frequency modulation to Oscillator 2.

FILTER FRQ — Pressing this switch routes frequency modulation to the Filter. Modulating the frequency of the filter creates a "wah-wah" effect.

MODULATION 2

DEPTH 2 — This control determines the AMOUNT of modulation sent to the destination switches below.

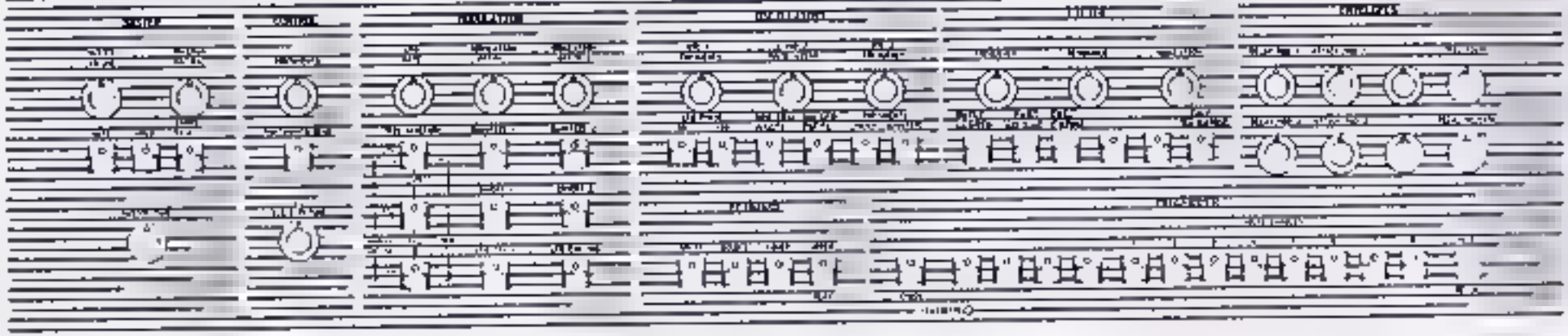
OSC 1 PWM — Pressing this switch routes modulation to the pulse width of Oscillator 1. Pulse width modulation does not alter the pitch of the oscillators but rather the shape of the pulse wave, causing a change in the timbre of the sound not unlike the effect of a rotating speaker on an organ.

OSC 2 PWM — Pressing this switch routes modulation to the pulse width of Oscillator 2.

VOLUME MOD — Pressing this switch routes modulation to control the volume of the Voltage Controlled Amplifier (VCA). This volume modulation (also known as amplitude modulation) creates the effect of tremolo, among other things

OB-8

PAGE 2 FUNCTIONS



Many of the DB-8's features are controlled by a "second page" of controls, in other words, the knobs and buttons on the front panel have two functions for example, the control labeled LOUDNESS ENVELOPE RELEASE becomes the SUSTAIN PEDAL RELEASE control when in PAGE 2.

All of the Page 2 controls (with the exception of the VOICE ENABLES) are stored with a patch program. The continuous edit features of the controls on Page 1 apply to the controls on page 2 as well.

When in SPLIT or DOUBLE, the LOWER and UPPER buttons select display of PAGE 2 for the LOWER patch or UPPER patch, just as they do for page 1.

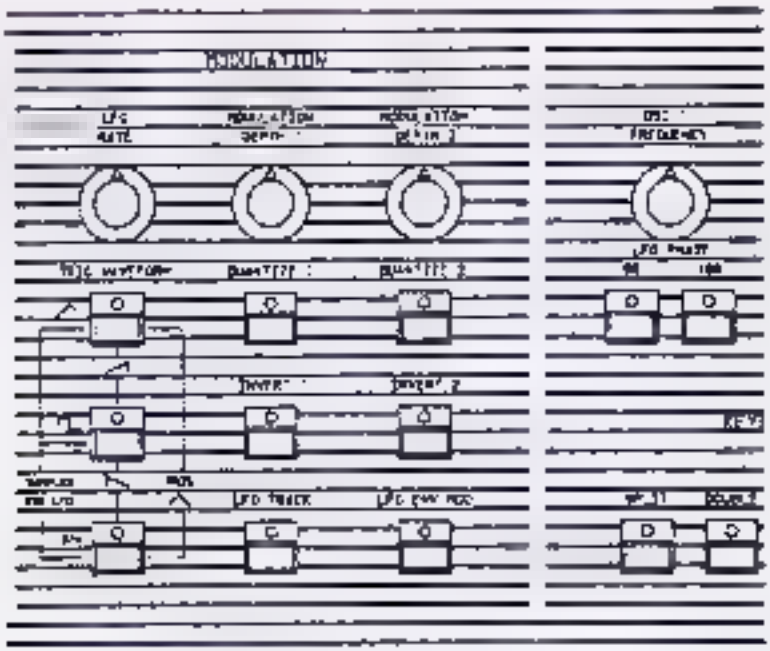
In MANUAL mode, the Page 2 functions do not operate except for the VOICE ENABLES.

ACCESSING PAGE 2

To access the second page of functions, press the CHORD/PAGE 2 button twice within 1.5 seconds. The CHORD/PAGE2 button will light, and voila, you will be looking at the second page of controls.

To return to page 1, press the CHORD/PAGE 2 button once more.

NOTE any "held notes" will be changed into a held chord whenever the CHORD/PAGE 2 button is pressed.



ADDITIONAL FRONT PANEL LFO CONTROLS

QUANTIZE 1
QUANTIZE 2

These switches quantize the sweep of the LFO into half steps. QUANTIZE 1 affects OSC 1 FRQ, OSC 2 FRQ, and FILTER FRQ, and QUANTIZE 2 affects OSC 1 PW, OSC 2 PW, and VOL MOD

LFO PHASE
90°
180°

These switches change the phase of the LFO. With both switches off, the LFOs of all voices are in phase. The buttons offset the LFO phase of Voices 5-8 by 90° or 180° relative to Voices 1-4.

The LFO PHASE control has no effect when LFO TRACK or LFO ENV MOD are on or when using a TRIG WAVEFORM.

TRIG WAVEFORM

Any of the waveforms of the front panel LFO can be selected as the TRIG waveform by selecting TRIG as the waveform on page 1 and then selecting the desired waveform on page 2. For example, if TRIG is selected on page 1 and UP SAWTOOTH is selected on page 2, the result will be an UP SAWTOOTH that is reset every time a new key is pressed

TRIG POINT

The TRIG waveform can be set to retrigger at any point in its cycle by turning the TRIG POINT control on page 2.

LFO ENVELOPES

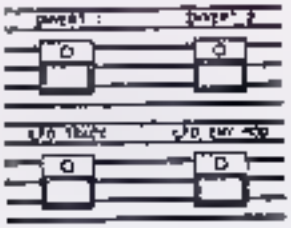
Besides the FILTER ENVELOPE and VOLUME ENVELOPE, there are two simple envelope generators for the LFO, one for DEPTH 1 (OSC 1 FRQ, OSC 2 FRQ, and FILTER FRQ) and another for DEPTH 2 (OSC 1 PW, OSC 2 PW, and VOL MOD). The LFO envelope generators enable changes in modulation depth as a note plays, just as the FILTER ENVELOPE and VOLUME ENVELOPE enable changes in the filter and volume levels as note plays.

DELAY MOD 1
DELAY MOD 2

These controls set the time delay of the LFO's envelope generators. The delay ranges from a minimum of zero to a maximum of 3.5 seconds. The delay is reset each time a new note is played. MOD 1 affects OSC 1 FRQ, OSC 2 FRQ, and FILTER FRQ, and MOD 2 affects OSC 1 PW, OSC 2 PW, and VOL MOD.

ATTACK MOD 1
ATTACK MOD 2

These controls set the attack time of the LFO's envelope generators. The attack time ranges from a minimum of zero to a maximum of 3.5 seconds. The attack time is reset each time a new note is played. MOD 1 affects OSC 1 FRQ, OSC 2 FRQ, and FILTER FRQ, and MOD 2 affects OSC 1 PW, OSC 2 PW, and VOL MOD.



INVERT 1
INVERT 2

These switches invert the LFO envelope generators. INVERT 1 affects OSC 1 FRQ, OSC 2 FRQ, and FILTER FRQ, and INVERT 2 affects OSC 1 PW, OSC 2 PW, and VOL MOD.

With INVERT off, the LFO will start each note at zero modulation and increase to the depth set by the appropriate DEPTH control in the time set by the DELAY and ATTACK tome controls

With INVERT on, the LFO will start each note at the modulation depth set by the DEPTH control and decrease to zero modulation in the time set by the DELAY and ATTACK controls.

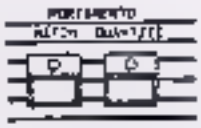
LFO TRACK

This adds 1/4 of the keyboard to the rate of the LFO. The LFO speed will double every four octaves on the keyboard (e.g -C0 to C4).

LFO ENV MOD

This switch acts something like the F-ENV switch on page 1. Pressing this switch enables the LFO 2 envelope to control the rate of the LFO. The LFO 2 DEPTH controls the amount of modulation. DELAY 2, ATTACK 2, and INVERT 2 will all effect the rate of the LFO when this switch is on.

PORTAMENTO MODES



MATCH — When the MATCH switch is on, all voices will portamento at exactly the same rate. When the MATCH switch is off, the voices will portamento at slightly different rates.

QUANTIZE — This switch quantizes the sliding portamento into semitone steps.

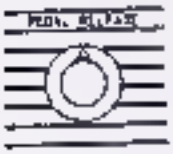
PORTAMENTO BEND — This switch causes all notes to glissando from a programable interval above or below the note being played. The rate of the glide is controlled by the PORTAMENTO control on either page.

Programming Portamento Bend — Press and hold the PORTAMENTO BEND control, and play a note on the keyboard. The C two octaves from the bottom of the keyboard (C2) equals zero bend, and each key away from C2 (up or down) equals a quarter-tone, e.g. pressing D3 will set notes to glide from a perfect fifth above.

Chord and Arpeggiator Portamento — Held Chords being transposed will not portamento if the PORTAMENTO BEND is on. Notes being Arpeggiated operate in the opposite manner: they will portamento only if the PORTAMENTO BEND is on. So, when using portamento with Held Chords that are being transposed and Arpeggiated, you have a choice. With the PORTAMENTO BEND on, each arpeggiated note will portamento; with the PORTAMENTO BEND off, only the chord transpositions will portamento.

VOICE DETUNE

This control detunes the voices from each other. Some of the voices are tuned flat, some sharp, and some remain the same. The voices are detuned when the led above the control is on. Zero detune is achieved by turning the VOICE DETUNE control completely counter-clockwise.



PEDAL SUSTAIN (FOOTSWITCH RELEASE TIME)

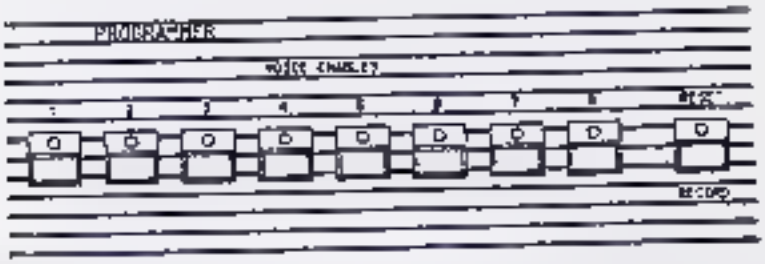
This control sets the release time of the FILTER and VOLUME ENVELOPES when the SUSTAIN FOOTSWITCH is depressed. The PEDAL SUSTAIN can be set to any amount of time from zero to 20 seconds.

PAGE 2 RESET

All of the controls on Page 2 can be reset to minimum or off. To reset Page 2, follow this procedure:

1) press the CHORD/PAGE 2 button twice, and hold the button the second time.

2) While holding the CHORD/PAGE 2 button, press the PAGE 2 RESET button (labelled "F-ENV") on the front panel.



VOICE ENABLE SWITCHES

The individual voices can be enabled or disabled from the front panel using the PROGRAM 1-8 buttons on page 2. A voice is enabled when the corresponding PROGRAM light is on.

The OB-8 is equipped with a Cassette Interface which enables programs contained in the program memory to be stored externally on an audio cassette. All that is required to use the Cassette Interface feature is an audio cassette recorder with reasonable frequency response and a pair of mini-plug to mini-plug audio connecting cables

NOTE: The cassette player must have an earphone or ext. speaker output (a LINE OUT will not work).

NOTE: The OB-8 Cassette Interface is not compatable with other Oberheim synthesizers

TAPE RECORDER HOOKUP

Connect the Earphone or Speaker output of your cassette recorder (a Line output will not work) to the jack labeled "TO OUTPUT" on the rear of the OB-8. Connect the "TO LINE INPUT" jack on the rear panel of the OB-8 to the Line or Aux input of your cassette recorder. If the recorder does not have one, connect the "TO MIC INPUT" jack on the rear panel to the Mic input of your cassette recorder.

NOTE: To reduce hum, the "TO LINE INPUT" and "TO MIC INPUT" jacks have no ground connection. For this reason, it is necessary to connect both the Input and the Output cables when recording data onto the cassette recorder.

CASSETTE INTERFACE CONTROLS

--REAR PANEL--

CASSETTE ENABLE — This switch enables the cassette interface. When the Cassette Interface is enabled, the CASSETTE LIGHT on the front panel lights up and all normal functions on the instrument are disabled.

--FRONT PANEL--

RECORD — This function shares a switch with the WRITE function. Pressing RECORD allows you to record your programs onto tape.

PLAY — This function shares a switch with the UPPER function. Pressing PLAY allows you to play your programs from the tape into the OB-8.

CHECK — This function shares a switch with the MANUAL function. Pressing CHECK allows you to check your program recordings without writing them into the OB-8.

HOLD — This button cancels any Cassette operation at any time.

TO RECORD PROGRAMS ONTO TAPE:

1) Enable the Cassette Interface with the switch on the rear panel

2) Press the RECORD switch on the tape recorder. You should now hear a steady tone through the main outputs of the DB-8 The MASTER VOLUME control will adjust the volume of the tone heard in the DB-8 s outputs, but will not affect the level of the Cassette Interface Output.

3) Press the RECORD switch on the DB-8. After the RECORD switch is pressed, ten seconds of the steady "leader" tone will be sent out followed by sixteen seconds of the actual memory information During these twenty-six seconds, the light on the RECORD switch will be on The GROUP lights (A, B, C, D) come on in sequential order ("A", "B", "AB", "C", "AC", etc) indicating that information transfer is taking place

The RECORD function can be cancelled by pressing the HOLD button.

TO PLAY PROGRAMS FROM TAPE INTO THE DB-8:

1) Enable the Cassette Interface with the switch on the rear panel.

2) Press PLAY on the tape recorder You will be able to monitor the tape through the main outputs of the DB-8. The MASTER VOLUME will control the volume for monitoring the tape.

3) As soon as the "leader" tone is heard, press the PLAY switch on the DB-8. At least three seconds of the "leader" tone must come between pressing PLAY and the rough sound of the memory information. The light on the PLAY switch will be lit from the time the switch is pressed until the first of the memory information is recognized. At that point, the GROUP lights (A, B, C, D) come on in sequential order ("A", "B", "AB", "C", "AC", "ABC", etc) indicating which group is being transferred. The Splits and Doubles are transferred last.

   If the MEMORY PROTECT switch on the Rear Panel of the DB-8 is set to PROTECT, the PLAY light will not operate.

4) If an error is detected, the PLAY light will flash.

The PLAY function can be cancelled by pressing the HOLD button.

TO RECORD PROGRAMS ONTO TAPE:

1) Enable the Cassette Interface with the switch on the rear panel.

2) Press the RECORD switch on the tape recorder. You should now hear a steady tone through the main outputs of the DB-8. The MASTER VOLUME control will adjust the volume of the tone heard in the DB-8's outputs, but will not affect the level of the Cassette Interface Output.

3) Press the RECORD switch on the DB-8. After the RECORD switch is pressed, ten seconds of the steady "leader" tone will be sent out followed by sixteen seconds of the actual memory information. During these twenty-six seconds, the light on the RECORD switch will be on. The GROUP lights (A, B, C, D) come on in sequential order ("A", "B", "AB", "C", "AC", etc.) indicating that information transfer is taking place.

The RECORD function can be cancelled by pressing the HOLD button.

TO PLAY PROGRAMS FROM TAPE INTO THE DB-8:

1) Enable the Cassette Interface with the switch on the rear panel.

2) Press PLAY on the tape recorder. You will be able to monitor the tape through the main outputs of the DB-8. The MASTER VOLUME will control the volume for monitoring the tape.

3) As soon as the "leader" tone is heard, press the PLAY switch on the DB-8. At least three seconds of the "leader" tone must come between pressing PLAY and the rough sound of the memory information. The light on the PLAY switch will be lit from the time the switch is pressed until the first of the memory information is recognized. At that point, the GROUP lights (A, B, C, D) come on in sequential order ("A", "B", "AB", "C", "AC", "ABC", etc.) indicating which group is being transferred. The Splits and Doubles are transferred last.

   If the MEMORY PROTECT switch on the Rear Panel of the DB-8 is set to PROTECT, the PLAY light will not operate.

4) If an error is detected, the PLAY light will flash.

The PLAY function can be cancelled by pressing the HOLD button.

TO CHECK TAPES:

The CHECK function of the Cassette Interface enables verification of the data on a tape without actually transferring the data into the OB-8's memory. A TAPE SHOULD ALWAYS BE CHECKED AFTER RECORDING.

1) Enable the Cassette Interface with the switch on the rear panel.

2) Press PLAY on the tape recorder. You will be able to monitor the tape through the main outputs of the OB-8.

3) As soon as the "leader" tone is heard, press the CHECK switch on the OB-8. As with the PLAY switch, at least three seconds of "leader" tone must follow pressing the switch and precede the rough sound of the memory information. The CHECK light will be on during the reception of the leader tone and the GROUP lights will sequence, just as during the PLAY operation, however no actual information transfer into memory takes place.

4) A CHECK error is indicated if the CHECK light flashes at the end of the operation.

The CHECK function can be cancelled by pressing the HOLD button.

POSSIBLE CAUSES OF TAPE TRANSFER ERRORS

A) There is a dropout on the tape.

B) The playback volume is too high or too low. Some trial and error may be required. Generally the best level is as high as possible before distorion occurs (approximately 3/4 of the way up). If the playback volume is too low, the OB-8 will not acknowledge the data at all.

C) The tone control may be set improperly. It is important that the tone control(s) be set so that neither the high nor the low frequencies are attenuated.

D) The Batteries in the cassette machine are too weak.

The Cassette Interface is designed to work with portable cassette recorders having an "Earphone", "Speaker", or "Monitor" output. The Interface is not designed to work with tape recorders having only a line output.

PLAYING SELECTED PATCHES FROM TAPE INTO THE OB-8:

Up to eight individual patch Programs can be played from tape into the OB-8. Follow this procedure:

1) Enable the Cassette Interface with the CASSETTE ENABLE switch on the rear panel.

2) Select the location of the desired Patch Program to be loaded from the tape by pressing the GROUP and PROGRAM buttons. This "source" location will remain lit on the GROUP and PROGRAM buttons.

3) Select the destination of this Patch Program by again pressing the GROUP and then the PROGRAM buttons. While the PROGRAM button is pressed, the "destination" location will be displayed; after the PROGRAM button is released, the GROUP and PROGRAM lights will go dark, indicating that the source and destination has been stored.

4) Up to eight individual Patch Programs can be selected to be played into the OB-8 at one time by repeating this procedure.

5) After programming the selected Patch Sources and Destinations, start the tape recorder and press PLAY as soon as the "leader" tone starts. The entire tape will play, and the GROUP lights will sequence, but only the selected patches will actually be loaded into the OB-8's memory.

The Patch selections can be cancelled by pressing the HOLD button.

COMPUTER INTERFACE

The OB-8's Computer can be interfaced to other components such as the DSX DIGITAL POLYPHONIC SEQUENCER via the COMPUTER INTERFACE connector on the rear panel.

USING THE OB-8 WITH THE DSX

The Oberheim DSX Digital Polyphonic Sequencer can be used to play notes and change patches on the OB-8. The DSX features 10 Sequences, each of which contains 10 Tracks which can be individually recorded and played.

The OB-8 connects to the DSX with the multi-pin connector supplied with the DSX.

For more information, consult the DSX Owner's Manual.

SPECIFICATIONS

SYNTHESIZER COMPONENTS: 8 Voices; 3 Low Frequency Oscillators ,Arpeggiator, Polyphonic Portamento, Pink Noise Source

VOICE COMPONENTS:
- 2 Voltage Controlled Oscillators
- 1 Voltage Controlled Filter (2-Pole or 4-Pole low pass type, selectable)
- 2 Envelope Generators
- 1 Voltage Controlled Amplifier

LFO COMPONENTS:
- 1 Voltage Controlled Low Frequency Oscillator with Triangle, Square, Up and Down Sawtooth waveforms
- 1 Sample/Hold Generator

Front Panel LFO's only:
- 2 Envelope Generators
- 90° and 180° Phase switch
- Quantizing
- Keyboard Track
- Programmable Trigger point

NUMBER OF PROGRAMS: 120 Patch Programs, 12 Split Programs, 12 Double Programs

KEYBOARD: 5 Octaves (C to C)

KEYBOARD MODES: FULL, SPLIT (splits C0-8 into two independent synthesizers), and DOUBLE (plays both independent synthesizers simultaneously); programmable split point and transpositions anywhere on the keyboard (in SPLIT or DOUBLE)

INPUTS/OUTPUTS: Stereo and Mono signal outputs (Output Level: 1 Volt peak to peak, 75K Ohms Impedance)

Cassette Interface inputs and outputs
Arpeggiator Clock Input

Computer Interface (Parallel Interface)

FOOT CONTROLS: Footswitches: Sustain, Hold, Program Advance
Foot Pedals: Volume, Filter, Vibrato

POWER: 90-130 or 180-240 Volts AC, 50-60 Hz, 46 Watts

DIMENSIONS: 40"(101.6cm) wide, 20"(50.8cm) deep, 6"(15.24cm) high

WEIGHT: 38 lbs. 17 (kg)